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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/735,431 | 12/11/2003 | Stephen E. Henderson | T-6260 | 8936 |
| 34014 7590 09/18/2007 CHEVRON CORPORATION P.O. BOX 6006 SAN RAMON, CA 94583-0806 | | | EXAMINER SINGH, PREM C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1764 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/735,431 | Applicant(s) HENDERSON ET AL. | |
| | Examiner Prem C. Singh | Art Unit 1764 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

Revival of this Application from un-intentional abandonment under 37 CFR

1.137(b) is noted.

Amendment to claims 1 and 11 and cancellation of claims 5 and 16, is noted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 6-8, 10-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marland et al (WO 99/37737) in view of Benham et al (US Patent 5,620,670).

Claims 1-4 and 11-14.

Marland invention discloses a low temperature or high temperature Fischer Tropsch (FT) process using a fixed or slurry catalyst bed (Page 1, lines 15-17; page 2, lines 1-17). The invention further discloses, "The hard wax may thus be a wax produced by the FT synthesis process, from which lighter fraction has been removed". (Page 2, lines 17-19). Marland also discloses in the Example that 59% hydrocarbons with C_{49+} in the feed convert to 24% hydrocarbons with C_{49+} in the product (Page 7, lines 23-25; page 8, lines 1-8). It means that the cracking conversion is 59.3%. Marland invention discloses, "A process for treating a wax, which process includes thermally cracking, in a cracking stage, a feed wax having a congealing point $X^{\circ}C$, to produce, as a primary product, a lighter wax having a congealing point $Y^{\circ}C$, where $X > Y$." (Page 1, lines 4-7). Marland further discloses in the figure, cracked products from cracker (18)

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being cooled in the cooler (24) and separated in the distillation column (28), thereby giving overhead product (30) and low pour point wax (32).

Marland discloses products of FT synthesis and collecting FT wax but does not disclose collecting FT condensate.

Benham invention discloses FT condensate (Figure 3) from the distillation column (120).

Since Marland and Benham inventions are using FT synthesis under similar conditions producing similar products, it would have been obvious to one skilled in the art at the time the invention was made to combine Marland and Benham inventions and take a portion of the condensate from Benham device and blend with the lighter wax of Marland process to reduce the viscosity of the wax. Also, sine Marland discloses the congealing point or temperature, Y, of the lighter wax in the range of 60°C to 90°C (Page 4, lines 11-13), it would have been obvious to one skilled in the art at the time the invention was made to modify Marland invention and take a portion of the overhead light products (stream 30) to blend with the lighter wax (32) to produce a product with pour point of about 20°C for use in the lubricants.

Claim 6.

Marland invention discloses, "In the distillation column (28), the wax product is separated into light hydrocarbon fraction, which includes the inert gas, and leaves along the overhead withdrawal line (30)." (Page 7, lines 11-14).

Marland does not specifically mention about separation of light products in stream (30). But it would have been obvious to one skilled in the art at the time the invention was made to modify Marland invention and separate the components into C₅+ and C₄- products and use the C₅+ as a blending component as mentioned under claim 1 to make use of the light stream otherwise going to waste and make the process more economical.

Claims 7 and 8.

Marland does not disclose recycle of C₄- hydrocarbon products and a reformer.

Although Benham invention does not disclose the cracking of wax (figure 3), it would have been obvious to one skilled in the art to combine Marland and Benham inventions and take wax from Benham (figure 3) and crack in the cracker disclosed in Marland to recycle the light gases from distillation column to the FT reactor (110). Figure 3 of Benham invention also shows light hydrocarbon gases from distillation column and the figure of Marland invention also shows light hydrocarbon gases from distillation column (30). Although Marland and Benham inventions do not specifically mention about methane, but it is known to those skilled in the art that methane is one of the components of the light hydrocarbon gases. Benham invention (figure 3) clearly shows recycle of light hydrocarbon gases (i.e., methane) recycle (stream 138) to the reformer (105).

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Claim 15.

Although Marland does not disclose the pour point but it does disclose the congealing point or temperature, Y, of the lighter wax in the range of 60-90°C (Page 4, lines 11-13). Thus, it would have been obvious to one skilled in the art to modify Marland invention and determine the pour point which is an equivalent parameter to express the flow characteristics of the wax.

Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marland et al (WO 99/37737) in view of Benham et al (US Patent 5,620,670) and further in view of Richter et al (US Patent 6,315,891).

Claims 9 and 17.

Marland and Benham inventions do not disclose blending petroleum-derived crude in the FT waxy product.

Richter invention discloses, "A process for producing a waxy product, which process comprises hydrotreating a feedstock comprising a FT wax and a petroleum-based waxy distillate." (Column 1, lines 8-14). Richter shows in Tables 1 and 2 the ASTM distillation characteristics of FT wax and petroleum based waxy distillate respectively (Column 1, lines 35-45, lines 56-66). It can be observed that the FT wax has lower initial and final boiling point compared to the petroleum based distillate.

Since Marland, Benham, and Richter inventions teach a similar process of producing a FT wax, it would have been obvious to one skilled in the art at the time the

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invention was made to combine the teachings of Marland, Benham, and Richter and blend petroleum derived crude oil in the FT waxy product to reduce the initial and final boiling points of the finished waxy product.

Claims 10 and 18.

Marland discloses that the process is used to convert a hard wax, particularly a FT derived hard wax to a lighter wax (Page 11, lines 5-8). Marland also discloses that the congealing point of the hard wax is above 90°C (Page 1, lines 10-12) and congealing point of the lighter wax is in the range of 60-90°C (Page 4, lines 11-13). Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the Marland invention and specify the reduced viscosity of the lighter wax than the hard wax because "lighter" and "lower congealing point" are equivalent to the "reduced viscosity".

Response to Arguments

Applicant's arguments filed 05/01/2007 have been fully considered but they are not persuasive.

The Applicant argues that the claims as amended referred to wax materials having a pour point below 20°C, i.e., about 68°F. It is submitted that none of the

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references cited by the Examiner teach the specific process nor the properties of the product as presently claimed.

The Applicant's argument is not persuasive because the combined teachings of Marland and Benham inventions disclose wax materials with the claimed pour point as discussed under claim 1 above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

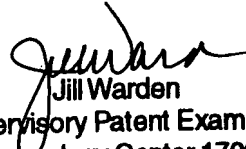
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prem C. Singh whose telephone number is 571-272-6381. The examiner can normally be reached on MF 7:00 AM-3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS/090607


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